Statement of
Carl Pope
Executive Director
Sierra Club

Before the
Select Committee on Energy Independence and Global Warming

April 18, 2007

I. Introduction

Dear Mr. Chairman, members of the Committee:

I am Carl Pope, the Executive Director of the Sierra Club. The Sierra Club is America's oldest and largest grass-roots, citizen environmental organization. We represent 1.3 million members and supporters; we have been addressing issues of energy policy since 1970. Most recently we originated the petition to the Environmental Protection Agency which resulted in this month's Supreme Court decision that global warming is an environmental problem subject to the Clean Air Act.

It is an honor to appear before you today, to address one of the most important challenges facing our nation and the world; how to prevent global warming and climate change from devastating the future. I believe that the work of this Select Committee has the potential to go down as the moment when the federal government pivoted from laggard to leadership on the issue of global warming.

America has already pivoted. More state, local and grass-roots leadership is being demonstrated on a smart and secure energy future than I have seen on any environmental question since the early 1970's. But Washington has not caught up, either with the need or with the American people – that is your challenge.

II. Climate Change Has Historically Been a Major Source of Global Insecurity

Today's hearing addresses the national security implications of global warming. Lincoln said that slavery "somehow" caused the Civil War. In our hearts, we all know that our addiction to oil is "somehow" responsible for the War in Iraq.

But while oil addiction is the nexus between the causes of global warming and the threats to our national security, global warming itself is a much bigger threat to our security than oil addiction alone would be. The irony of the recent debate about whether we should take effective action to curb global warming is that one of the arguments from those who would delay is uncertainty. Uncertainty about future climate patterns should not be a reassuring argument for inaction; it should sound the alarm for urgent action. Climatic uncertainty and instability have historically been at the root of many long range threats to human security, and are again today.

Indeed, climate change has been one of the major sources of violence and instability during most of human history. From the 4th century BC until the battle of Ayn Jalut in 1260 which ended the Mongol Invasion of the Middle East, world history was dominated by climate change wars. For 1700 years the drying out of Central Asia sent wave after wave of nomads to topple the Roman Empire, unseat Chinese dynasty after dynasty, expel the Byzantine empire from Asia Minor, and finally topple the Arab Caliphate by sacking, ironically, Baghdad. Attila the Hun and Genghis Khan were propelled onto the world scene by climate change.

III. Developing a New Clean Energy Economy Would Solve Global Warming and Bolster National Security by Cutting America's Oil Dependence.

We have the solutions today to solve global warming and cut America's oil dependence. Putting this technology to work is critical. Both of these issues put America's economy, environment, and national security in jeopardy. We must, and we can, create a new clean energy economy that reduces greenhouse gas emissions by replacing our reliance on oil and other fossil fuels.

Both oil consumption and oil imports are growing. The United States consumes nearly 21 million barrels of oil per day. That will rise to over 24 million barrels per day by 2020 according to the Energy Information Administration (EIA).

We consume nearly 25 percent of the world's oil, yet we sit on just 3% of the known reserves – we can not meet our oil demand by expanding domestic drilling. As a result, we will become increasingly reliant on imported oil. According to the EIA, we are currently on a trajectory to import 64 percent of our oil by 2020.

Growing Oil Dependence Hurts Our National Security.

Increasing our oil imports puts the United States at the mercy of foreign governments – many of which are undemocratic and oppose U.S. foreign policy. Persian Gulf countries hold over 65 percent of the world's oil reserves. There is a growing sense within the national security community that America's oil dependence puts our national security at risk. This sentiment is expressed in stark terms in a study by the Strategic Studies Institute of the U.S. Army War College, "America is buying billions of dollars of oil from nations that are sponsors of, or allied with, radical Islamists who foment hatred against the United States. The dollars we provide such nations contribute materially to the terrorist threats facing America."[1]

Growing Oil Dependence Also Hurts the U.S. Economy.

The U.S. currently sends $500,000 overseas every minute to pay for oil products. According to the U.S. Department of Energy, price spikes from 1979 to 1991 cost the U.S. economy about $4 trillion – nearly as much as we spent on national defense over the same period. Each price spike in the last three decades was followed by an economic recession.

America Must Avert the Impacts of Global Warming.

Even the US Supreme Court now recognizes that global warming is a reality that must be confronted. The science is clear that we are causing global warming. Human activity is responsible for the earth's rising temperature. Burning fossil fuels like oil, coal, and natural gas is putting heat-trapping gases into the atmosphere.

[1] Kraemer, Thomas D. "Addicted to Oil: Strategic Implications of American Oil Policy." U.S. Army War College. March 15, 2006.

We are already seeing the impacts of global warming. 19 of the hottest 20 years on record have all occurred since 1980. The recent IPCC report made it clear that we are experiencing climate change, which is disrupting communities.

In order to avert the worst impacts of climate change, scientists tell us that we must reduce global warming emissions 80 percent below 1990 levels by 2050. Unless we begin to act now to address global warming, we will face serious consequences.

Global Warming Puts Our Economy at Risk.

According to the recently released report by Sir Nicholas Stern (Head of the UK Government Economic Service and former World Bank Chief Economist) the total cost to the global economy if we fail to address rising global warming emissions is $3.68 trillion. Further, the Stern report stated that we can stabilize the climate at a cost of about one per cent of annual global output by 2050. If no action is taken, climate change will reduce global consumption per head by between five and 20 per cent. In other words, $1 invested now can save $5 later. Solving global warming will create markets for new clean energy technology, spurring economic investment and job creation.

Global Warming Puts Our Environment at Risk.

According to the recent IPCC report, 20-30 percent of assessed plant and animal species on Earth are at risk of extinction if the increase in global average temperature exceeds 2.3-4.1ºF (1.3-2.3ºC). The IPCC report also warns that extreme weather events such as heat waves, droughts, fires, wildfires, floods, and severe storms will become more intense and/or frequent and we can expect a host of impacts on human health and economic well-being. Rising sea levels threaten coastal communities and island nations. Finally, the World Health Organization has reported that global warming is leading to at least 5 million additional cases of illness and more than 150,000 premature deaths each year.

Global Warming Threatens National Security

Climate change and disruption will put pressure on populations with scarce resources, creating competition for those resources and sparking conflict. At the same time, decreasing crop yields, drought, rising sea levels and other climate impacts will create new refugee populations, further destabilizing already vulnerable regions. Over 200 million people live in coastal cities and low-lying countries which would be affected by rising sea levels.

This was recently summarized in a report for the military prepared by Peter Schwartz of the Global Business Network, who warned that greater climatic variability – regardless of its details – would create enormous instability in societies already under stress. “Just look at Somalia in the early 1990s. You had disruption driven by drought, leading to the

collapse of a society, humanitarian relief efforts, and then disastrous U.S. military intervention. That event is prototypical of the future."[2]

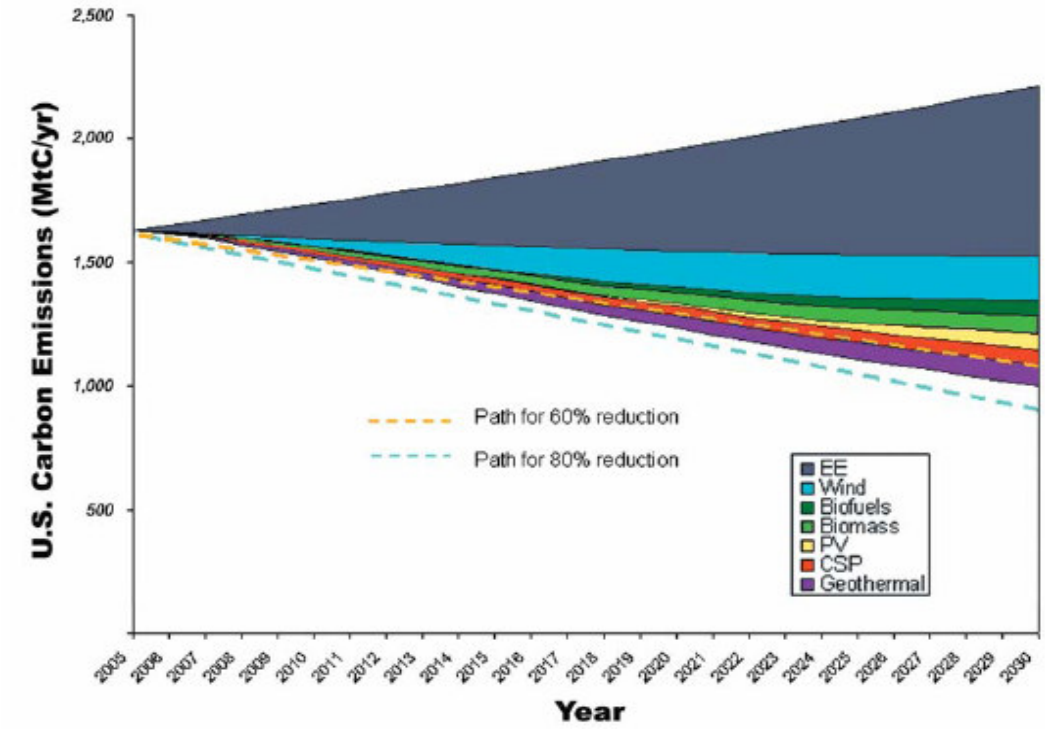
IV. We Have the Smart Energy Solutions Needed to Meet this Challenge

We can address global warming and cut America's oil dependence by increasing the fuel economy of American vehicles, expanding energy efficiency, investing in renewable energy and clean, renewable fuels, and by setting a national cap on global warming emissions.

We Have a Road Map for How to Respond.

In January, the Sierra Club released a report in cooperation with the American Solar Energy Society that laid out the possibilities for aggressively pursuing energy efficiency and renewable energy to displace carbon emissions. Written by many of America's leading researchers at our national laboratories and universities, it found that, simply by exploiting existing efficiency and renewable energy technologies, we can be well on our way by 2030 to a 60-80 percent reduction in global warming emissions that are needed.

Figure 1: Potential carbon reductions in 2030 from energy efficiency and renewable technologies and paths to achieve reductions of 60% and 80% below today's emissions value by 2050.[3]



[2] Andrew C. Revkin and Timothy Williams. "Global Warming Called Security Threat." *New York Times*. April 15, 2007

[3] Charles F. Kutscher, Ed. "Tackling Climate Change in the U.S." American Solar Energy Society. January 2007. http://www.ases.org/climatechange/climate_change.pdf

Transportation – Fuel Economy & Clean Fuels

The greatest opportunity to simultaneously reduce global warming emissions and cut America's oil dependence comes in the transportation sector. Transportation accounts for 60 percent of U.S. oil consumption and one-third of U.S. global warming pollution.

Specifically, most of the progress can be made with passenger vehicles. Making our cars and trucks go farther on a gallon of gas is the biggest single step we can take to cutting our oil dependence, curbing global warming, and saving consumers money at the gas pump. The technology exists today to make all vehicles – from sedans to SUVs to pickup trucks – go farther on a gallon of gas.

According to a 2002 report by the National Academy of Sciences, the technology exists today to raise fuel economy by at least 4 percent per year over the next ten years. Taking this step would save over 3 million barrels of oil per day by 2025 – more oil than we currently import from the entire Persian Gulf. It would also keep 523 billion metric tons of global warming pollution out of the atmosphere each year, while saving consumers $31 billion dollars per year in reduced gasoline costs.

We know that raising fuel economy standards is an effective tool to reduce U.S. oil consumption. When Corporate Average Fuel Economy (CAFE) standards were first adopted in 1975, they doubled the fuel economy of new vehicles within ten years. According to the National Academy of Sciences, had Congress not taken this step, today the United States would consume an additional 2.8 million barrels of oil per day, making CAFE the nation's most successful oil savings law ever passed.

The Sierra Club urges Congress to raise CAFE standards by at least 4 percent per year. Specifically, the Sierra Club supports the Markey-Platts CAFE legislation, H.R. 1506.

In addition to improving fuel economy, we have an opportunity to expand the use of renewable fuels, such as cellulosic ethanol. If produced correctly, cellulosic or 'non-food' ethanol releases 85 percent less global warming pollution than conventional gasoline. However, we should aggressively work through the significant economic and technological barriers that remain to converting to cellulosic ethanol and develop realistic targets for how large a role ethanol can play in reducing U.S. oil consumption. Increasing fuel economy helps buy time to allow cellulosic ethanol to progress. It also will ensure that U.S. vehicles maximize the benefit of each gallon of ethanol by using it more efficiently. The Sierra Club urges Congress to support development of cellulosic ethanol and other low-carbon fuels.

Renewable Energy and Energy Efficiency

In addition to the gains that can be made in the transportation sector, we can create new clean energy sources by shifting electricity production towards greater production of

clean renewable energy sources, like wind and solar power. At the same time, we need to ensure that our economy becomes more energy efficient.

Over a third of US global warming emissions come from electricity production. Coal-fired power plants are the largest source of global warming pollution in the US. While less than 2 percent of electricity production is generated with oil, a clean and efficient electrical grid would allow technologies such as plug-in hybrid vehicles to play a significant role in reducing oil consumption when the technology becomes ready for the market.

We recommend that Congress adopt a national Renewable Energy Standard requiring that 20 percent of U.S. electricity come from renewable energy sources by 2020. Already, 22 states have adopted these standards, including Texas under Governor George W. Bush. Some of these states have requirements that exceed what has been proposed in Congress. Minnesota recently adopted a 30% Renewable Energy Standard by 2020, while New Jersey has a 22.5% by 2020 requirement and New York is poised to get 24% of its electricity from renewable sources by 2013.

Developing renewable energy sources not only reduces global warming emissions, it also spurs economic development and new jobs. The Sierra Club supports the Udall-Platts Renewable Energy Standard (H.R. 969)

Finally, the cheapest, cleanest, and quickest way to reduce global warming emissions from the utility sector is through energy efficiency programs. Just like renewable energy, many states are leading the way on energy efficiency programs. The Sierra Club supports the adoption of a nation energy efficiency resource standard (EERS) that puts the nation's electric sector on a dependable track toward greater efficiency, mandating that utilities become at least 10 percent more energy efficient by 2020.

Comprehensive Global Warming Legislation

The United States must enact a comprehensive global warming policy that combines a declining greenhouse gas emissions cap with aggressive standards for high-emission sectors. Scientists have singled out the coming decade as a critical period in which the nation and the world need to reverse the growth of global warming emissions and begin to make net reductions. We believe that aggressive regulatory measures to make vehicles more fuel efficient, accelerate the penetration of renewable energy technologies, and spur efficiency gains in the electric and natural gas sectors are critical to responding to that short term scientific challenge.

The Sierra Club supports a gradually declining cap on global warming emissions to achieve an 80% reduction in emissions below 1990 levels by 2050. The U.S. government should auction off these emission credits in order to provide an equitable and market based mechanism to distribute allowances.

Comprehensive legislation would send a strong message to capital markets and the industry that there will be real constraints on carbon, helping to shift investment into low-carbon energy technology. It is important to understand that a declining economy wide carbon emission cap and steadily increasing performance standards in each energy sector are both essential and mutually complementary. As General Electric's Jeffrey Immelt has said "the market does not work in energy."[4]

The lack of innovation in the energy sector is the result of systematic market failure within sectors, as well as the lack of appropriate internalization of the cost of pollution emissions economy wide. Those who design and manufacture automobiles do not pay the gas bills; those who construct houses do not pay the utility bills; in many cases electrical utilities are allowed to pass on to the ratepayers and even make profits from the costs of inefficiency or fossil fuel dependence, but are prohibited from making a profit from efficiency or renewables.

We need both sector by sector reform and an economy wide carbon cap.

Liquid Coal – The Wrong Way to Go

The Bush Administration last week announced that it favored substituting coal based motor fuels for those based on oil. Alexander Karsner, assistant secretary for renewable energy at the Energy Department told the Senate, "The President is the one who has a National Security Council report every morning that is driving his thinking on the urgency of displacing gasoline consumption. America should throw all of its resources at this problem."[5]

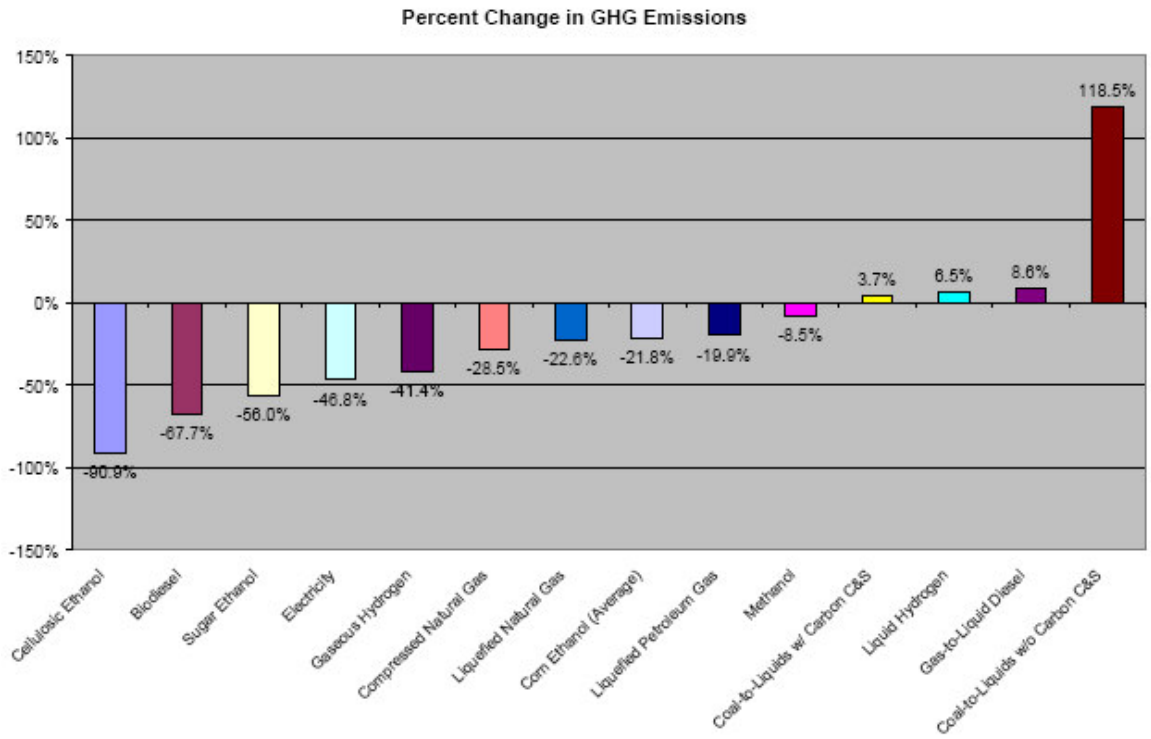
Producing motor fuel from coal may look attractive to many as a way to reduce imports of foreign oil, but its costs far outweigh its benefits. We cannot solve a problem by making it worse. Widespread use of liquid coal will send us hurtling in the wrong direction on global warming – most likely doubling the emissions from every car that uses coal liquids.

While the Sierra Club has serious concerns that carbon capture and sequestration is technically feasible, even if it were mandated and worked for any and every liquid coal plant, production and use of the fuel would result in a 4-15 percent increase in global warming gases over and above that emitted in the current petroleum fuel cycle.

[4] Friedman, Thomas L. "The Power of Green." *The New York Times.* April 15, 2007.
[5] Efstathiou Jr., Jim. "Bush Presses for Coal Liquids to Cut Gasoline Use" *Bloomberg*. April 12, 2007.

Without mandatory and effective carbon capture and storage from day one at liquid coal plants, the technology is a global warming nightmare.

Figure 2 – Comparative Greenhouse Gas Emissions by Fuel Type[6]



In addition to taking the country backwards on global warming emissions, liquid coal does not make economic sense. According to the Department of Energy, an individual liquid coal plant would cost approximately $7 billion. As a result, creating a commercial scale liquid coal industry would be incredibly expensive. Since the industry is already looking to Congress for loan guarantees and guaranteed markets, liquid coal would end up costing American taxpayers billions and billions of dollars. This is an irresponsible use of taxpayer dollars when there are cleaner, cheaper, and more effective solutions to America's oil dependence.

If coal is used to generate electricity, and the carbon emissions from the power plant are captured and sequestered, then indeed by being used in a fleet of plug-in hybrids America's coal reserves – if responsibly mined and cleanly burned – can become part of the solution to both global warming and oil imports. But not by being turned into coal liquids.

[6] U.S. EPA. Office of Transportation and Air Quality. *Greenhouse Gas Impacts of Expanded Renewable and Alternative Fuels Use***.** EPA420-F-07-035 April 2007

V. Conclusion

Congress has an important role to play in developing policies that will cut America's oil dependence and curb global warming. This Committee has the opportunity to lead Congress in carrying out that role.

Congress should act now to raise fuel economy standards, invest in renewable energy and energy efficiency, move forward on clean, renewable fuels, and adopt economy-wide caps on global warming emissions.

When I was growing up I used to ask my father – repeatedly, "Daddy, what did you do in the war?" Children borne today may turn to us and ask, "What did you do in the Warming?" I urge this Committee to lead us all towards an answer that we can give with pride – that America led the world back from the precipice of climate collapse and climate conflict.